

1 **WE CLAIM:**

2

3 1. An aircraft comprising

4 a) a fuselage

5 b) thin supersonic wings on the

6 fuselage,

7 c) there being trailing edge flaps carried

8 by the wings,

9 d) said flaps configured to provide flap

10 deflection to simultaneously control wing twist and to

11 reduce drag, when the aircraft is operated at subsonic

12 flight conditions.

13

14

15 2. The aircraft of claim 1 wherein said

16 wings have low sweep angularity relative to the

17 fuselage to provide substantial laminar airflow, the

18 wings further characterized as having relatively low

19 torsional stiffness.

20

21

22

23

24

1 3. The aircraft of claim 2 wherein the
2 wings are further characterized as having
3 b) a center of pressure, at subsonic flight
4 conditions,
5 b) a torsional elastic center,
6 and wherein in the absence of said flap deflection at
7 subsonic flight condition said center of pressure is
8 forward of said torsional elastic center, tending to
9 create moments of force acting to twist the wing tip to
10 higher angles of attack.

11

12

13 4. The aircraft of claim 2 wherein in the
14 absence of said flap deflection said center of pressure
15 is substantially closer to said torsional elastic
16 center, under supersonic flight conditions, than under
17 subsonic flight conditions.

18

19

20 5. The aircraft of claim 3 wherein with
21 said flap deflection provided as in claim 1, the center
22 of pressure is substantially closer to said torsional
23 elastic center under subsonic flight conditions, than
24 in the absence of said flaps.

25

26

1 6. The aircraft of claim 1 wherein said
2 flaps provide camber acting to reduce subsonic wing
3 leading edge vortex drag, and compressibility drag
4 increase.

5
6
7 7. The aircraft of claim 1 including means
8 for monitoring wing twist, and to control flap
9 angularity to reduce said twist, thereby providing
10 closed loop feed back.

11
12
13 8. The aircraft of claim 1 including a
14 control system or systems to maintain the flaps
15 positioned to control twist and drag, at subsonic
16 flight conditions.

17
18
19 9. The aircraft of claim 8 wherein the
20 control system or systems is configured to monitor
21 flight conditions including air speed, and to position
22 the flaps.

23
24
25
26